

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A printer control unit for issuing a command to a printer that is able to perform double-side printing, comprising:

mode designation receiving means for receiving the designation of double-side printing mode in which both surfaces of a printing medium are target surfaces to be printed;

command generating means for generating a feed command for correcting the timing of feeding the printing medium, ~~in the case where~~ when said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium; and

command issuing means for issuing said feed command generated by said command generating means as said command to be supplied to said printer.

2. (original): A printer control unit for issuing a command to a printer which suspends the advancement of a printing medium, which is being fed by the rotation of a feeding roller, by a registering roller located forward of said printing medium, comprising:

mode designation receiving means for receiving the designation of double-side printing mode in which both surfaces of the printing medium are target surfaces to be printed;

command generating means for generating a command, upon receipt of the designation of said double-side printing mode by said mode designation receiving means, for rotating said registering roller in the direction to move said printing medium backward before restart of advancement and rotating said feeding roller in accordance with the rotation of said registering roller in order to feed said printing medium for printing a second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium; and

command issuing means for issuing said command generated by said command generating means as said command to be supplied to said printer.

3. (currently amended): ~~A~~The printer control unit as set forth in Claim 2, further comprising:

detecting means for detecting information on ~~the~~ quantity of ink used for printing a first image on the printing medium, the first image ~~which~~ is to be printed ahead of the other one of said pair of images, ~~characterized in that~~

wherein said command generating means generates a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with information detected by said detecting means on said first image to be printed in combination with said second image as a command for feeding said printing medium for printing said second image.

4. (currently amended): ~~A-The~~ printer control unit as set forth in Claim 2, ~~characterized in that wherein~~ said command generating means generates a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with a type of said printing medium as a command for feeding said printing medium on which said second image is to be printed.

5. (currently amended): ~~A-The~~ printer control unit as set forth in Claim 3, ~~characterized in that wherein~~ said command generating means generates a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with a type of said printing medium as a command for feeding said printing medium on which said second image is to be printed.

6. (currently amended): A storage medium having a program for controlling a printing mechanism with a double-side printing function stored therein, ~~characterized in that~~ said program is for making a printer control unit for controlling said printing mechanism execute;

a mode designation receiving process for receiving ~~the~~ designation of double-side printing mode in which both surfaces of a printing medium are target surfaces ~~to be for~~ printed;

a command generating process for generating a feed command for adjusting ~~the~~ timing of feeding the printing medium, upon receipt of the designation of the double-printing mode, for printing the second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium; and

a command issuing process for issuing said command generated by said command generating process as a command to be supplied to said printing mechanism.

7. (currently amended): A storage medium having a program stored therein for controlling a printing mechanism that suspends the advancement of a printing medium, which is being fed by ~~the~~ rotation of a feeding roller, ~~once by~~ to a registering roller located forward of said printing medium, ~~characterized in that~~ said program makes a printer control unit for controlling said printing mechanism execute;

a printing mode designation receiving process for receiving ~~the~~ designation of double-side printing mode in which both surfaces of the printing medium are target surfaces ~~to be for printing~~;

a command generating process for generating a feed command, upon receipt of the designation of said double-side printing mode, for rotating said registering roller in the direction to move said printing medium backward before restart of advancement and for rotating said feeding roller in accordance with the rotation of said registering roller in order to feed said

printing medium for printing a second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium; and

a command issuing process for issuing said feed command generated by said paper feed command generating process.

8. (currently amended): ~~A-The storage medium as set forth in Claim 7, characterized in that wherein when the double-side printing mode is designated, said program makes said printer control unit execute a detecting process for detecting information on ~~the~~ quantity of ink used for printing a first image which is to be printed ahead of the other ~~one image~~ of said pair of images, and generate a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with the detected information on the first image paring with said second image.~~

9. (currently amended): ~~A-The storage medium as set forth in Claim 6, characterized in that wherein said program makes said printer control unit generate a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with a type of said printing medium as a feed command for a-feeding said printing medium for printing said second image.~~

10. (currently amended): ~~A-The~~ storage medium as set forth in Claim 7, ~~characterized in that wherein~~ said program makes said printer control unit generate a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with a type of said printing medium as a feed command for feeding said printing medium for printing said second image.

11. (currently amended): A printer control unit for issuing a command to be supplied to a printer that is able to print images on both surfaces of a printing medium, comprising:

mode designation receiving means for receiving ~~the~~ designation of double-side printing mode in which both surfaces of the printing medium are target surfaces ~~to be~~ for printinged;

command generating means for generating a command, upon receipt of the designation of double-side printing mode by said printing mode designation receiving means, for delaying ~~the~~ start of feeding the printing medium for printing a second image which is to be printed later out of a pair of images having consecutive page numbers among a plurality of images to be printed by said printer; and

command issuing means for issuing the command generated by said command generating means as said command.

12. (currently amended): ~~A-The~~ printer control unit as set forth in Claim 11, further comprising:

detecting means for detecting information on ~~the~~ quantity of ink used for printing a first image which is to be printed ahead of the other ~~one~~ image of said pair of images,

~~characterized in that wherein~~ said command generating means generates the command for delaying the start of feeding the printing medium for printing the second image as long as ~~the~~ period of time corresponding to ~~the~~ waiting time according to information detected by said detecting means on a first image paring with said second page.

13. (currently amended): ~~A~~ The printer control unit as set forth in Claim 11, further comprising:

printing condition storing means ~~which for~~ storing information on waiting times in correspondence with at least one of a type of printing medium and a type of ink,

~~characterized in that wherein~~ said command generating means reads the waiting time corresponding to at least one of the type of printing medium on which said second image is to be printed and the type of ink used for printing the first image paring with said second image, from said printing condition storing means, and generates the command for delaying the start of feeding the printing medium for printing said second image as long as the period of time ~~corresponding~~ ing to said waiting time.

14. (currently amended): ~~A~~ The printer control unit as set forth in Claim 12, ~~characterized in that wherein~~ said command generating means reduces the waiting time before

starting feeding the printing medium for printing said second image according to ~~the~~ time elapsed since printing of said first image is finished.

15. (currently amended): ~~The~~A printer control unit as set forth in Claim 13, ~~characterized in that wherein~~ said command generating means reduces the waiting time before starting feeding the printing medium for printing said second image according to ~~the~~ time elapsed since printing of said first image is finished.

16. (currently amended): ~~A~~~~The~~ printer control unit as set forth in Claim 11, ~~characterized in that wherein in the case where when~~ said printer is a printer of ~~the~~ a type which suspends ~~the~~ advancement of the printing medium, which is fed by the rotation of a feeding roller, ~~by~~ to a registering roller located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in ~~the~~ direction to move said printing medium a backward and rotating said feeding roller according to the rotation of said registering roller, into the command for delaying the start of feeding the printing medium for printing said second image.

17. (currently amended): ~~A~~~~The~~ printer control unit as set forth in Claim 12, ~~characterized in that wherein in the case where when~~ said printer is a printer of ~~the~~ a type which suspends ~~the~~ advancement of the printing medium, which is fed by the rotation of a feeding

roller, ~~by~~ to a registering roller located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in ~~the~~ direction to move said printing media backward and rotating said feeding roller according to the rotation of said registering roller into the command for delaying the start of feeding the printing medium for printing said second image.

18. (currently amended): ~~A~~ The printer control unit as set forth in Claim 13, ~~characterized in that wherein in the case where when~~ said printer is a printer of ~~the~~ a type which suspends ~~the~~ advancement of the printing medium, which is fed by ~~the~~ rotation of a feeding roller ~~by~~ to a registering roller located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in ~~the~~ a direction to move said printing media backward and rotating said feeding roller according to the rotation of said registering roller into the command for delaying the start of feeding the printing medium for printing said second image.

19. (currently amended): ~~A~~ The printer control unit as set forth in Claim 14, ~~characterized in that wherein in the case where when~~ said printer is a printer of ~~the~~ a type which suspends ~~the~~ advancement of the printing medium, which is fed by ~~the~~ rotation of a feeding roller ~~by~~ to a registering roller located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in ~~the~~ a direction to move said printing media backward and rotating said feeding roller according to the rotation

of said registering roller into the command for delaying the start of feeding the printing medium for printing said second image.

20. (currently amended): ~~A~~The printer control unit as set forth in Claim 15, ~~characterized in that wherein when in the case where~~ said printer is a printer of ~~the~~a type which suspends ~~the~~ advancement of the printing medium, which is fed by ~~the~~ rotation of a feeding roller ~~by~~to a registering roller located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in ~~the~~a direction to move said printing media backward and rotating said feeding roller according to the rotation of said registering roller into the command for delaying the start of feeding the printing medium for printing said second image.

21. (currently amended): A storage medium including a program for allowing a printer control unit to issue a feed command to a printer which is able to print images on both surface of a printing medium;_; said program allowing said printer control unit to execute:

a detecting process for detecting information on ~~the~~ quantity of ink used for printing a first image which is to be printed ahead of the other ~~one~~image of said pair of images having consecutive page numbers to be printed by said printer;

a mode designation receiving process for receiving ~~the~~ designation of double-side printing mode in which both surfaces of the printing medium are target surfaces ~~to be~~ for printinged;

a command generating process for generating a command for delaying the start of feeding the printing medium for printing a second image as long as ~~the~~ period of time corresponding to ~~the~~ waiting time according to the detected information on said first image paring with said second; and

a command issuing process for issuing a command for feeding the printing medium.

22. (currently amended): A printer control unit for issuing a command to be supplied to an ink jet printer, comprising:

mode designation means for receiving ~~the~~ designation of ~~the~~ a mode, said mode comprising one of between double-side printing mode and one-side printing mode;

transmit-receive means for making an inquiry about said ink jet printer whether or not ~~the~~ double-side printing is possible when double side printing mode is designated by said mode designation means, receiving a response to said inquiry, and issuing a printing command as said command; and

printing command generating means for:

when said transmit-receive means receives the response representing that the double-side printing is possible, generating a printing command for the double-side printing mode as printing command to be issued by said transmit-receive means, and

when said transmit-receive means receives other responses, generating a first printing command for the one-side printing mode relating to one of an odd-numbered page and an even-numbered page successively as printing command to be issued by said transmit-receive means, and then generating a second printing command for one-side printing mode relating to the other one of the odd-numbered page and the even numbered page successively as printing command to be issued by said transmit-receive means.

23. (currently amended): ~~A~~ The printer control unit as set forth in Claim 22,

wherein ~~characterized in that~~ when said transmit-receive means completes the transmission of all of said first printing command, said transmit receive means makes an inquiry about whether or not said ink jet printer has executed printing according to all of said first printing command, and receives a response to said inquiry; and

~~in that~~ said printer control unit further comprises; when said transmit-receive means receives the response indicating that printing according to all of said first printing command is finished, output means for outputting the response.

24. (original): A printer control unit as set forth in Claim 22, further comprising:

margin setting means for setting a margin of at least one of an odd-numbered page and an even-numbered page; and

automatic remaining margin setting means for setting a margin in such a manner that, when double-side printing mode is designated by numbered page and said even-numbered page is set by said margin setting means, the right margin of one of the pages of which the margins said mode designation means and the margin for one of said odd-are not set is set to the same width as the left margin of the other page of which said margins are set, and the left margin of one of the pages of which the margins are not set is set to the same width as the right margin of the other page of which said margins are set.

25. (original): A printer control unit as set forth in Claim 24 further comprising display means for displaying a printing medium for the odd numbered page and a printing medium for the even-numbered page, and for displaying margins set by said margin setting means and said automatic remaining margin setting means.

26. (original): A printer control unit as set forth in Claim 22, further comprising;

drawing command generating means for generating a drawing command which serves as a source when said printing command generating means generates said printing command, and

specifying a printing area on the printing medium for printing based on said drawing command;
and

margin setting means for setting a margin on the printing medium for executing a
printing job based on said printing command.

characterized in that said print command generating means comprises:

drawing means for rasterizing said drawing command into an image; and

drawing control means for controlling said drawing means in such a
manner that when a part of the printing area specified by said drawing command
generating means is overlapped with said margin as a result of setting the margin by said
margin setting means, said drawing command for one page is rasterized into a downsized
image so that the image for a page fits into the area that is not overlapped with said
margin in said printing area.

27. (currently amended): A printer control unit as set forth in Claim 22, further
comprising output means ~~that for outputtings a message~~ message for confirming whether or not
ink for double-side printing is installed in said ink jet printer when double-side printing mode is
designated by said mode designation means.

28. (currently amended): A printer control unit as set forth in Claim 23, further
comprising output means that outputs a ~~message~~ message for confirming whether or not ink for

double-side printing is installed in said ink jet printer when double-side printing mode is designated by said mode designation means.

29. (currently amended): A printer control unit as set forth in Claim 22, further comprising; reversing time setting means for setting a reversing time required for reversing the printing medium after printing on one of surfaces of a printing medium is finished and be ready for printing on the other surface thereof, and transmitting said reversing time via said transmit-receive means when said ink jet printer is in the double-side printing mode.

30. (currently amended): A printer control unit as set forth in Claim 23, further comprising; reversing time setting means for setting a reversing time required for reversing the printing medium after printing on one of surfaces of a printing medium is finished and be ready for printing on the other surface thereof, and transmitting said reversing time via said transmit-receive means when said ink jet printer is in the double-side printing mode.

31. (currently amended): ~~A~~The printer control unit as set forth in Claim 29, further comprising:

printing medium type designation means for designating a type of the printing medium; and

storage means for storing ~~the~~ relation between the type of the printing medium that can be specified by said printing medium type specifying means and the reversing time;

~~characterized in that~~ wherein when the type of the printing medium is specified by said printing medium type specifying means, said reversing time setting means refers to the stored contents in said storage means and sets the reversing time corresponding to said type of the printing medium.

32. (currently amended): ~~A~~ The printer control unit as set forth in Claim 30, further comprising:

printing medium type designation means for designating a type of the printing medium; and

storage means for storing ~~the~~ relation between the type of the printing medium that can be specified by said printing medium type specifying means and the reversing time;

~~characterized in that~~ wherein when the type of the printing medium is specified by said printing medium type specifying means, said reversing time setting means refers to the stored contents in said storage means and sets the reversing time corresponding to said type of the printing medium.

33. (currently amended): An ink jet printer that jets ink from a printing head to print on a printing medium according to a printing command supplied from a printer control unit, wherein

said ink jet printer permits installation of a reversing mechanism for reversing said printing medium after one of the surfaces of said printing medium is printed, and guiding the printing medium so that the other surface of the printing medium faces toward said printing head, comprising:

installation detecting means for detecting whether or not said printing medium reversing mechanism is installed; and

transmit-receive means for returning a response; ~~working in such a manner that:~~

wherein:

when said printing command and the inquiry about whether or not double-side printing is possible are received from said printer control unit; and when said installation detecting means detects the installation of said printing medium reversing mechanism, ~~a~~ the response indicating that double-side printing is possible is returned, and

when said installation detecting means does not detect the installation of said printing medium reversing mechanism, ~~a~~ the response indicating that double-side printing is not possible is returned.

34. (original): An ink jet printer as set forth in Claim 33, further comprising said reversing mechanism.

35. (original): An ink jet printer for jetting ink from a printing head and printing on a printing medium according to a printing command from a printer control unit, comprising;

a reversing mechanism for reversing said printing medium after one of the surfaces of said printing medium is printed, and guiding the printing medium so that the other surface of the printing medium faces toward said printing head; and

transmit-receive means for receiving said printing command from said printer control unit and an inquiry about whether or not double-side printing is possible and making a response indicating that double-side printing is possible.

36. (currently amended): A printer system comprising:

a printer control unit; and

an ink jet printer for jetting ink from a printing head and printing on a printing medium according to a printing command from a printer control unit;

wherein said printer control unit comprises: ~~comprising~~;

mode designation means for designating of the mode between double-side printing mode and one-side printing mode;

transmit-receive means for making an inquiry whether or not said ink jet printer is able to execute double-side printing when double-side printing mode is designated by said mode designation means, receiving a response to said inquiry, and issuing the generated printing command; and

printing command generating means for:

when said transmit-receive means receives a response representing that double-side printing is possible, generating a printing command for double-side printing mode as printing command to be issued by said transmit-receive means, and

when said transmit-receive means receives other responses, generating a first printing command for one-side printing mode relating to one of an odd-numbered page and an even-numbered page successively as printing command to be issued by said transmit-receive means, and then generating a second printing command for one-side printing mode relating to the other one of the odd-numbered page and the even numbered page successively as printing command to be issued by said transmit-receive means, and

wherein said ink jet printer is characterized in that comprises:

a reversing mechanism for reversing said printing medium after one of the surfaces of said printing medium is printed, and guiding the printing medium so that the other surface of the printing medium faces toward said printing head is installable; comprising:

installation detecting means for detecting whether or not said printing medium reversing mechanism is installed; and

transmit-receive means working in such a manner that:

when said printing command and the inquiry about whether or not double-side printing is possible are received from said printer control unit; and when said installation detecting means detects the installation of said printing medium reversing mechanism, a response indicating that double-side printing is possible is returned, and

when said installation detecting means does not detect the installation of said printing medium reversing mechanism, a response indicating that double-side printing is not possible is returned.

37. (currently amended): A printer system comprising:

a printer control unit; and

an ink jet printer for jetting ink from a printing head and printing on a printing medium according to a printing command from a printer control unit;

wherein said printer control unit comprises: ~~comprising;~~

a mode designation means for designating of the mode between double-side printing mode and one-side printing mode;

a transmit-receive means for making an inquiry whether or not said ink jet printer is able to execute double-side printing when double-side printing mode is designated by said mode designation means, receiving a response to said inquiry, and issuing a printing command; ~~and~~

printing command generating means for:

when said transmit-receive means received the response representing that double-side printing is possible, generating a printing command for double-side printing mode as printing command to be issued by said transmit-receive means, and

when said transmit-receive means receives other responses, generating a first printing command for one-side printing mode relating to one of an odd-numbered page and an even-numbered page successively as printing command to be issued by said transmit-receive means, and then generating a second printing command for one-side printing mode relating to the other one of the odd-numbered page and the even numbered page successively as printing command to be issued by said transmit-receive means;

margin setting means for setting a margin of at least one of the odd-numbered page and the even-numbered page;

automatic remaining margin setting means for setting a margin in such a manner that, when double-side printing mode is designated by said mode designation means and the margin for one of the odd-numbered page and the even-numbered page is set by said margin setting means, the right margin of one of the pages of which the margins are not set is set to the same width as the left margin of the other page of which said margins are set, and the left margin of one of the pages of which the margins are not set is set to the same width as the right margin of the other page of which said margins are set; and

display means for displaying the printing medium for the odd-numbered page and the printing medium for the even-numbered page, and for displaying margins set by said margin setting means and said automatic remaining margin setting means;

wherein said ink jet printer comprises: ~~is characterized in that~~

a reversing mechanism for reversing said printing medium after one of the surfaces of said printing medium is printed, and guiding the printing medium so that the other surface of the printing medium faces toward said printing head is installable;
~~comprising:~~

installation detecting means for detecting whether or not said printing medium reversing mechanism is installed; and

transmit-receive means working in such a manner that:

when said printing command and the inquiry about whether or not double-side printing is possible are received from said printer control unit; and when said installation detecting means detects the installation of said printing medium reversing mechanism, a response indicating that double-side printing is possible is returned, and

when said installation detecting means does not detect the installation of said printing medium reversing mechanism, a response indicating that double-side printing is not possible is returned.

38. (original): A storage medium having a program of a printer control unit including transmit-receive means for issuing a command to an ink jet printer, said program including:

a mode designation process for receiving the designation between double-side printing mode or one-side printing mode;

transmit-receive process for making an inquiry of said ink jet printer about whether or not the double-side printing is possible when double-side printing mode is designated by said mode designation process, receiving a response to said inquiry; and

printing command generating process for:

when said transmit-receive means receives the response representing that double-side printing is possible, generating a printing command for double-side printing mode and issuing said printing command via said transmit-receive means, and

when said transmit-receive means receives the response representing that double-side printing is not possible, generating a first printing command for one-side printing mode relating to one of an odd-numbered page and an even-numbered page successively and issuing the first command via said transmit-receive means, and

when all of said first printing command is transmitted, generating a second printing command for one-side printing mode relating to the other one of the odd-

numbered page and the even-numbered page successively and issuing the second command via said transmit-receive means.

39. (currently amended): ~~A~~The storage medium as set forth in Claim 38, ~~characterized in that wherein~~ the storage medium stores a program having a margin setting process for setting a margin in a printing medium for a printing job according to said printing command and said program is used with a program having a drawing command generating process which generates a drawing command as a source for generating said printing command in said printing command generating process and specifies a printing area of the printing medium based on said drawing command; and

wherein ~~in that~~ said printing command generating process comprises:

a drawing process for rasterizing said drawing command into an image; and

a drawing control process for controlling said drawing process in such a manner that when a part of the printing area specified by said drawing command generating process is overlapped with said margin set by said margin setting process, said drawing command for one page is rasterized into a downsized image so that an image for a page fits into the area which is not overlapped with said margin in said printing area.

40. (new): The print control unit according to claim 1, wherein correcting the timing of feeding the printing medium comprises adjusting a timing lag for arriving to a print head of the printing medium having the first image printed on one surface.

41. (new): The print control unit according to claim 6, wherein correcting the timing of feeding the printing medium comprises adjusting a timing lag for arriving to a print head of the printing medium having the first image printed on one surface.

42. (new): The print control unit according to claim 11, wherein said delaying the start of feeding the printing medium for printing the second image is based on a quantity of ink used in printing the first image on the printing medium.